NAVAL MEDICAL RESEARCH AND DEVELOPMENT

NEWS

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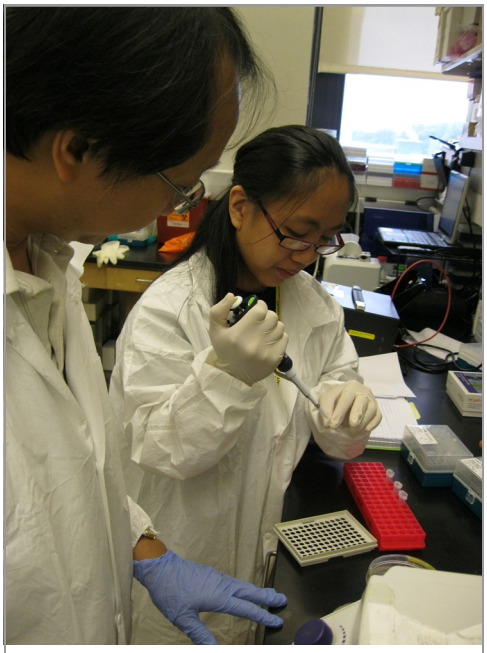
NMRC Introduces a New Set of Interns to a Career in STEM



SEAP intern Tiffany Le, a rising senior at Poolesville High School, prepares a PCR reaction sample to be placed in the thermocycler for her research on antimicrobial resistance in Orientia tsutsugamushi, while her mentor, Dr. Chao, looks on.

Science, Technology, Engineering and Mathematics (STEM) education is sailing full speed ahead nationally as eighteen Navy laboratories, including the Naval Medical Research Center (NMRC), participate in the program and are committed to the improvement of STEM over the next decade.

Through student programs like the Naval Research and Engineering Internship Program (NREIP) and Science and Engineering Apprenticeship Program (SEAP), efforts to strengthen STEM education and outreach are important for the United States to maintain its standing as the world's technology leader. Both programs are positioned as vehicles to drive the next generation toward careers in STEM.

As NREIP and SEAP continue to progress at NMRC, Lt. Mario Guerrero, the NMRC student programs coordinator, wants to expand both programs not just in size but also in diversity, as there are young people who, because of community status or socioeconomic limitations, are not exposed to interesting and exciting opportunities in Navy Medicine or science in general. The rising increase in Hispanic populations, for example, is not reflected in the pool of STEM graduates. Combined, these populations are expected to exceed 30 percent in 2050 according to U.S. Census Bureau projections.

The expectation is they will represent a major resource for the increasing STEM demand. Proposed STEM initiatives at the federal and state levels are poised to ensure these and other under-represented

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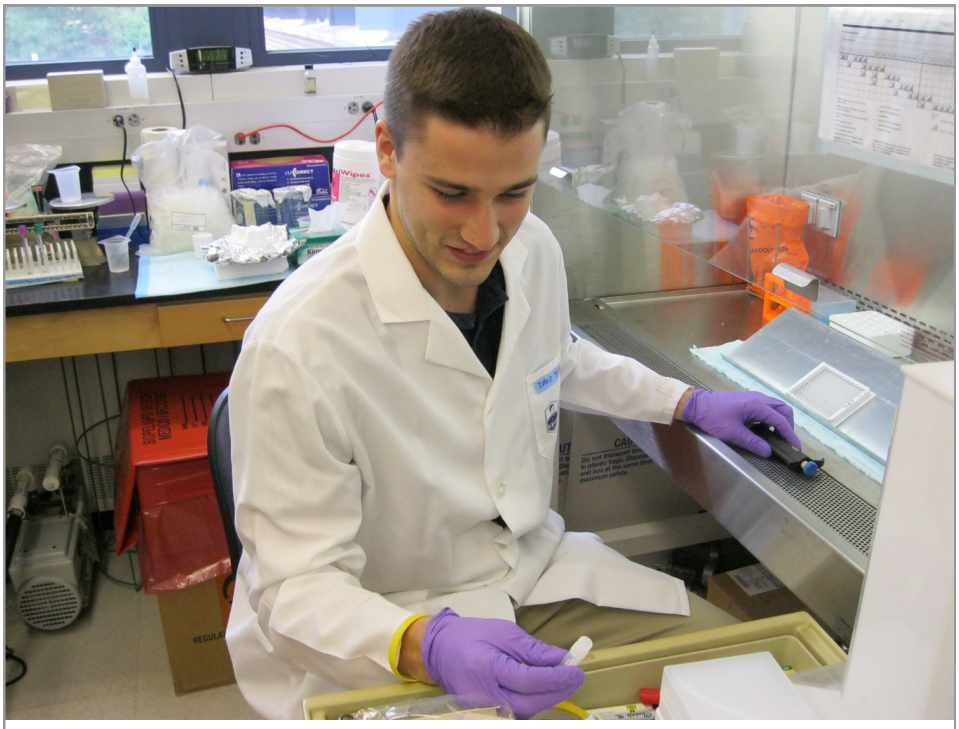

NREIP Intern David Barton, a rising junior at Georgetown University, works on an enzyme-linked assay to detect biomarkers in the blood following traumatic brain injury.

In this issue…

Commanding Officer's Message

Did you know that 89 percent of middle school students would rather do their chores than their math homework!

STEM stands for science, technology, engineering and mathematics. STEM fields are academic and professional disciplines considered the core technological underpinnings of a successful society, and the strength of the STEM workforce is viewed as an indicator of a nation's sustainability. Nearly 65 percent of DoN science and engineering professionals are over age 40, and more than 50 percent will be retirement-eligible by 2020.

There are many potential pathways into STEM, and the key to having a viable STEM workforce for DoD will be the extent to which U.S. young people can be attracted and retained in the STEM fields. To dramatically increase the reach and impact of the Navy's STEM investments, the Secretary of the Navy is committed to doubling the Navy's investment in STEM over five years. Now, more than ever, it is important to raise awareness of STEM education and career opportunities.

Consider:

- The U.S. is ranked 27th out of 29 for the rate of STEM bachelor's degrees awarded in developed countries. In the U.S., 6 percent of undergraduates major in engineering compared with 12 percent in Europe, 20 percent in Singapore and 40 percent in China.
- Undergraduate programs in science and engineering report the lowest retention rates among all academic disciples, with fewer than half of undergraduates who enter college intending to major in a STEM field completing a degree in one of those subjects.
- Only 33 percent of eight graders are interested in STEM majors and careers, and only 6 percent of high school seniors will earn a bachelor's degree in a STEM field.
- Only 18 percent of high school seniors are rated as science proficient and 33 percent as math proficient.
- Technological innovation has produced roughly half of all U.S. economic growth over the past 50 years.

Within the NMRC enterprise we are making a commitment to do our part to reach out to students to make them aware of the exciting careers and opportunities in Navy Medicine research and development and encourage them to focus their college experience on science, technology, engineering or mathematics and graduate with STEM degrees. I encourage all of our science staff to actively serve as ambassadors of Navy Medicine research and development and reach out to both schoolchildren and college students who will be our future military scientists.

Commanding Officer sends,
Richard L. Haberberger, Jr.
CAPT, MSC, USN

Secretary of the Navy Awards Meritorious Unit Commendation to NAMRL

By Cmdr. Rita Simmons, Executive Officer, NAMRU-Dayton

As the Naval Aerospace Medical Research Laboratory (NAMRL) closes the book on its 70-plus year history in Pensacola, the laboratory's scientific resurgence and push to maintain mission execution during a tumultuous period of reorganization and relocation to Ohio continue to be widely recognized.

Fittingly, in June 2011 NAMRL was awarded the Meritorious Unit Commendation (MUC) by the Secretary of the Navy for consistently demonstrating meritorious achievements above and beyond mission requirements from April 1, 2007 to April 1, 2010. The MUC is awarded to units whose accomplishments and achievements set them apart from other units performing similar services and is comparable to the individual Bronze Star award.

NAMRL distinguished itself by executing and delivering award-winning products to the fleet and maintaining high levels of research quality and productivity during the Base Realignment and Closure (BRAC) relocation from Naval Air Station Pensacola, Florida to Wright-Patterson Air Force Base in Dayton, Ohio. While many units facing BRAC intentionally scale down work volume or cease operations entirely, NAMRL improved scientific productivity by eight-fold, significantly increased sponsorship and research funding, and transitioned five innovative scientific products to the Fleet. In addition to setting itself apart through excellence in research and development, NAMRL personnel

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New Bonds Forged Between NAMRU-6 and the Peruvian Navy

By Lt. Heath Westcott, NAMRU-6 Public Affairs

In a ribbon cutting ceremony held May 11, the U.S. Naval Medical Research Unit No. 6 (NAMRU-6) officially opened its third laboratory hosted on a Peruvian Naval Base. The new laboratory is in the Madre de Dios Department of Peru, located in the Amazon basin.

The ceremony was attended by the Regional Vice President, Dr. Jorge Aldazábal Soto; the Commander of the Peruvian Naval Base, Capt. Luis Rodolfo Sara Llanos; and Mr. Roy Santos Mendoza, a representative of the Regional Health Department. NAMRU-6 Commanding Officer, Capt. John Sanders, presided over the event. During his remarks, Dr. Aldazábal thanked Capt. Sanders for NAMRU-6's contributions to the evaluation and study of tropical illnesses that afflict so many of the residents of Madre de Dios.

The Navy Base in Puerto Maldonado, the capital of Madre de Dios, is the central hub of the Peruvian Navy's operations on the Tambopata and Madre de Dios rivers. The new lab, totaling 2,347 square feet, will provide a platform for NAMRU-6's Emerging Infections, Parasitology, Bacteriology and Entomology Departments to study illness endemic to this remote area of the Amazon jungle.

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In addition, Peru and Brazil are currently completing a transcontinental highway traveling through Puerto Maldonado that will bisect the South American continent from east to west. This will be the first road of any kind to connect eastern and western South America through the Amazon Basin. All east/west travel through this region is currently possible only by boat or airplane. According to Sanders, completion of this highway provides an exciting opportunity for NAMRU-6 researchers to study the effects of increased access to a remote area on the incidence of new disease and impact on the transmission patterns of existing endemic diseases.

During the ceremony, Sanders thanked the Peruvian Navy for once again partnering with NAMRU-6 to provide infrastructure and support for important infectious disease research that benefits both countries' militaries and contributes so much to the public health capacity of Peru.

From left: Capt. John W. Sanders, Dr. Jorge Aldazábal Soto, Roy Santos Mendoza, and Capt. Luis Rodolfo Sara Llanos cut the ribbon officially opening the new NAMRU-6 lab on the Puerto Maldonado Navy base in Peru.

NAMRU-Dayton BRAC Nears Completion with Historic Ribbon Cutting

By NAMRU-Dayton Public Affairs

From left: Cmdr. Rita G. Simmons, Executive Officer of NAMRU-Dayton; Rear Adm. Bruce A. Doll, Command Surgeon, Joint Forces Command; and Capt. Keith A. Syring, Commanding Officer of NAMRU-Dayton.

A commemorative ribbon cutting ceremony was held, June 1 honoring the grand opening of the 711th Human Performance Wing (HPW) at Wright Patterson Air Force Base (WPAFB), Ohio, culminating a successful Base Realignment and Closure (BRAC) project. This multi-building, 680,000 square foot complex includes the Air Force School of Aerospace Medicine, the Human Effectiveness Directorate, the Air Force Research Laboratory 711th Human Performance Wing, the Human Performance Integration Directorate, and the Navy's newest research facility, Naval Medical Research Unit Dayton (NAMRU-Dayton). The construction teams and military personnel combined to finish the project 89 days ahead of schedule and $54 million under budget. The complex was named the Major Gen. Harry G. Armstrong Complex after the late Air Force General who helped engineer many of the firsts in aviation safety, including the pressurized cockpit. The state-of-the-science complex will allow Navy and Air Force researchers to continue to innovate and create a safer, more efficient environment for the men and women of the armed forces in the spirit of Major Gen. Armstrong.

The official party for the ceremony included Major Gen. William McCasland, Commander, Air Force Research Laboratory, and Presiding Officer; Col. John Frolet, Army Corps of Engineers; Mr. Dan Walsh, CEO, Walsh Group; and Mr. Thomas Wells, Director, 711th Human Performance Wing. The distinguished guests representing the Navy included Rear Adm. Bruce A. Doll, medical advisor, NATO Headquarters; and Capt. Richard L. Haberberger. Jr., commanding officer, Naval Medical Research Center. Other distinguished visitors included Mrs. Austria for Congressman Steve Austria of Ohio's 7th District; Fairborn's Mayor, Mrs. Joan L. Dautel; Riverside's Mayor, Mr. Bill Flaute; and several members of the late Major Gen. Armstrong's family. A plaque honoring Armstrong's accomplishments was presented and placed as a cornerstone to the complex.

From left: Col. John Drolet, Mr. Dan France, Maj. Gen. William McCalsand, Mr. Thomas Wells and Mr. Dan Walsh participate in the ribbon-cutting ceremony.

The ribbon cutting event marked the end of the largest BRAC effort at WPAFB. As part of the BRAC mandate to align Navy and Air Force aeromedical research, education and training, the Naval Aerospace Medical Research Laboratory (NAMRL) in Pensacola, Fla. was directed to collocate with the 711th HPW on WPAFB. In an effort to further enhance manpower cost savings, NAMRL was merged with the Navy's Environmental Health Effects Laboratory to form a command, NAMRU-Dayton. The new Navy building encompasses 38,000 square feet; several one-of-a-kind human vestibular and acceleration research devices; and a collection of human performance, cognitive and aviation medicine laboratories unmatched across the Department of Defense (DoD). The complex continues the tradition of the military's dedication to protecting flight crew and pilots and furthering aerospace medicine. These unique capabilities, combined with the environmental health effects basic research focus, position the laboratory to become one of the premier research facilities for Navy Medicine, other Services, and the DoD.

NMRC Officers Support Continuing Promise 2011 on USNS Comfort

Continuing Promise is an annual humanitarian civic affairs deployment to the U.S. Southern Command area of responsibility providing medical, dental, veterinary, engineering and subject matter expert exchanges with the goal of demonstrating dedication and commitment to our friends in the Caribbean, Central and South America. The Continuing Promise mission provides a unique training opportunity to learn from partner nations and civilian experts. Preparation for any future foreign disaster response efforts in this region is well-served by the cross-training with non-governmental organizations and host nation counterparts.

In support of this deployment, Cmdr. Mark Riddle and Lt. Andrea McCoy of the Naval Medical Research Center (NMRC) Enteric Diseases Department were augmented to the Preventive Medicine Department (PMD), an interdisciplinary group with professions including public health, preventive medicine, industrial hygiene and bio-environmental engineering. As true to other departments on this mission, the joint composition of Navy, Air Force and civilian personnel from non-governmental organizations (NGOs) provide a richness of experience, skill sets and opportunities to learn and share from each other.

The PMD mission is to preserve the health of the mission force through population-based methods of disease and injury avoidance and to provide host nations with information and assistance in preserving and improving the health of their populations.

Inspection of bulk cheese that is being readied for export at an artisan factory. (Cmdr. Riddle in foreground, Air Force Capt. Tracy Brannock and Mr. Max Gyllenskog (Latter Day Saints Charities) in background.)

"The Preventive Medicine Department plays a vital role in protecting the health of the nearly 900-member joint, multinational, NGO and civil service mariner staff on the Comfort ensuring that we all can individually be most effective in our performance," said Capt. David Weiss, commanding officer, USNS Comfort Medical Treatment Facility. He added, "The PMD's efforts in improving water and sanitation and information sharing with host nation communities in Peru and Colombia will hopefully continue to improve the lives of those inhabitants for years to come."

Members of the Preventive Medicine Department of USNS Comfort, from left: Cmdr. Mark Riddle, Mr. Kenneth Kartchner (Latter Day Saints Charities), Air Force Capt. Tracy Brannock, and Lt. Andrea McCoy assist the local health department in conducting a food safety inspection at a large chain supermarket in Rivas, Nicaragua.

Such deployments also provide unique opportunities to better understand disease threats and execute preventive medicine activities during these types of missions.

Using their unique background and capabilities in epidemiology and enteric diseases, Riddle and McCoy stood up an enhanced disease and non-battle injury and travelers' diarrhea surveillance. Through weekly self-report surveys and collection and microbiological analysis of specimens from acute illnesses, the PMD was able to provide leadership with actionable information on disease incidence, etiology, impact and targeted mitigation strategies. Not unexpectedly during these types of deployments, diar-

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NSMRL Tests New Eyewear for Submariners – No More Granny Glasses

A research team from the Naval Submarine Medical Research Laboratory (NSMRL) tested a new improved eyewear design to support Naval Ophthalmic Support and Training Activity's (NOSTRA) search for a replacement of the outdated and uncomfortable "granny" P3 glasses.

NOSTRA worked with a vendor to develop new submarine duty glasses that would be functional, attractive, comfortable and easily fit inside submarine emergency breathing apparatus used during drills and emergencies. After satisfactory analysis of the glasses at NOSTRA, Ms. Alison America, an NSMRL researcher, began testing the eyewear for fit and comfort with Submarine Independent Duty Corpsmen (IDC) volunteers from the Naval Undersea Medical Institute.

Submariner wearing new and improved submarine duty glasses. Photo provided by NSMRL.

"The IDCs provided positive feedback and comments on the initial evaluation of the eyewear, citing good fit and attractive appearance," said America. Based on their favorable comments, she proceeded with testing on submarines, providing eyewear prototypes to 57 volunteer submariners on the USS Hampton; USS Philadelphia, SSN 690; and USS New Hampshire, SSN 778. The volunteers wore the glasses for up to nine months, then provided their evaluations and comments to America.

"During my last deployment I found the new glasses to be lightweight, comfortable and extremely easy to wear in breathing protection. A vast improvement over the old glasses," said Cmdr. Chad Hennings, former executive officer, USS Hampton, SSN 767.

"I determined that 95 percent of submariners wanted the glasses available, saying that the new eyewear was an improvement, and the thin yet sturdy metal frames permitted a tight seal and easy fit within the full-face masks EABs," America said. "Also, the design avoided the uncomfortable pinching at the temples and resulting skin creases."

After successful testing, NOSTRA adopted and began issuing the new frames to submariners. The new glasses are now available at local optometry clinics.

Established in World War II to conduct mission-critical studies in night vision, sonar sound discrimination and personnel selection, NSMRL continues to serve the fleet by taking the lead in undersea human factors, sensory sciences and operational medicine.

Chief King's Retirement Ceremony

Chief Petty Officer Jesse King (left) accepts his certificate of retirement from NMRC CO Captain Richard L. Haberberger, Jr.. Photo by Phil Collins.

Chief Jesse King's salute to a respectable 20-year Navy career brought some emotional moments in a ceremony held at the Naval Medical Research Center (NMRC) June 3. In his final tour of duty, he served as the Leading Chief Petty Office of the Operations department and Command Chief of NMRC and its eight subordinate commands worldwide. His personal decorations include the Defense Meritorious Medal, Joint Achievement Medal, the Navy Commendation Medal, and two Navy Achievement Medals, among other awards.

NMRC Researchers Train Laboratory Personnel in Azerbaijan

In April, a Naval Medical Research Center (NMRC) research team trained Azerbaijan Ministry of Defense (MoD) laboratory personnel in the use of enzyme-linked immunosorbent assays (ELISA) to detect group-specific rickettsial IgG antibodies. The training took place at a Ministry of Health (MoH) laboratory, Baku, Azerbaijan.

"Two of these assays, developed at NMRC, will provide evidence of previous infection with typhus group rickettsiae (TGR) and spotted fever group rickettsiae (SFGR)," said Dr. Allen Richards of the Rickettsial Diseases Research Program at NMRC. "The TGR-IgG and SFGR-IgG specific ELISAs are currently being used in a U.S. Defense Threat Reduction Agency sponsored study supporting a U.S.-Azerbaijan collaborative study to assess the risk of infectious diseases to MoH personnel deployed to different regions of Azerbaijan."

Researchers are analyzing ELISA data.

Richards added, following basic training, recruits from Azerbaijan will be asked to join the study, and after receiving informed consent the volunteers will provide a blood sample and fill out a simple questionnaire. One year later at their new command, the military personnel will be asked to provide a second blood sample and again fill out a questionnaire. MoD personnel will test the samples using ELISA antibody titers at the time of basic training and compare this level to those of blood samples collected one year later at their new command. If there is a fourfold or greater rise in titer between the samples to a particular agent or group of agents, it will indicate the individuals were infected with the agent at the site of the new command. These results will show the MoD the presence of infectious diseases at that base and in that area of the country.

In addition, assessment of the initial blood sample alone will give the MoD and the MoH information about what infectious diseases circulate among individuals from all over Azerbaijan prior to coming into the military. To date about 450 personnel have enrolled in the study and about three percent have pre-existing antibodies to SFGR, indicating that at some time in their lives they were infected by spotted fever rickettsiae. None of the enrollees had evidence of infection with typhus group rickettsiae.

HM1 Odom Is New Senior Enlisted Advisor

Hospital Corpsman Petty Officer First Class George W. Odom, Sr. assumed the Enterprise Senior Enlisted Advisor position for Naval Medical Research Center (NMRC) June 3, 2011. Petty Officer Odom oversees enlisted matters for NMRC headquarters and eight worldwide subordinate commands. On the same day, he received his third bachelor's degree. HM1 Odom now holds a degree in Workforce Education Training and Development from Southern Illinois University of Carbondale and degrees in Theology and Biblical Studies from Grace Bible College and Seminary. He is also the Naval Medical Research Center's Regional Sailor of the Year.

Navy Researchers Inspire Students at the University of Maryland

Last semester, a team of researchers provided anthropology students at the University of Maryland with interesting perspectives on infectious disease research and their impact on public health. Seven members of the Viral and Rickettsial Diseases Department at the Naval Medical Research Center (NMRC) volunteered to talk about their work to thirty undergraduate students in Dr. Teresa Leslie's anthropology class between March 10 and April 21.

"Because of my interest in dengue, I became involved with this group at NMRC as a guest researcher. Being here, I noticed the phenomenal scientists, and another thing that struck me is the diversity," said Leslie. "What I see here is actually contrary to what a lot of students think the military is. During a staff meeting at NMRC, I talked about my course and asked for guest speakers. The response was overwhelming."

Prior to the beginning of the semester, the NMRC group met and reviewed Dr. Leslie's syllabus to ensure their selected topics were relevant to the undergraduates. They did not want to just present bench research, they wanted to go into the class and make their discussion interesting and significant to the class.

"This was a great opportunity to interact with the students", said Cmdr. Nimfa Teneza-Mora, who spoke about the clinical spectrum and epidemiology of dengue. "On our level we usually teach graduate medical students and residents, and this was another way to extend our reach to undergrads because these are the people who are going to be engaged in scientific research and may want to go to medical school someday."

Leslie pointed out that when the students came into the class, they were not thinking in terms of tropical infectious diseases. People tend to think about what affects them as a population; students are aware of HIV and hepatitis, she said. To have people come in and speak about *Helicobacter pylori* and ulcers that cause illness and cancer was eye-opening for the students.

Dr. Dougbeh Nyan talked about *H. pylori* and the class discussed gastric ulcers caused by this bacterium. The bacteria have existed for a long time and are prevalent around the globe. Students asked about the disease and how researchers know it existed so long ago and whether the bacteria caused disease throughout the ages.

"So the fact that we could trace these particular bacteria as it relates to human evolution really engaged the students. How [has] the population been affected by this bacteria? How [did] the bacteria spread around the globe with the migration of man from Africa to Europe?" said Nyan. "The students asked some very good questions from the anthropological aspects and we spoke about genetic drift."

Lt. Cmdr Janine Danko, the Viral and Rickettsial Diseases Department deputy director, presented an overview of public health in developing countries and the

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Front row, from left: Cmdr. Nimfa Teneza-Mora, M.D., M.P.H.; Peifang Sun, Ph.D.; Lt. Cmdr. Janine Danko, M.D., M.P.H. Back row, from left: Subhamoy Pal, Ph.D.; Dougbeh Nyan, M.D.; Teresa Leslie, Ph.D.; Kevin Swinson.

Researchers from the NMRC Viral and Rickettsial Diseases Department

- Dougbeh Nyan, M.D., research scientist. Topic: *Helicobacter pylori.*
- Subhamoy Pal, Ph.D., research scientist. Topic: Rapid Diagnostic Devices for the detection of dengue.
- Kevin Swinson, research technician. Topic: Hepatitis B – overview, epidemiology, and population genetics.
- Cmdr. Nimfa Teneza-Mora, M.D., M.P.H.; Infectious Diseases Directorate Deputy. Topic: Dengue – clinical spectrum and epidemiology.
- Peifang Sun, Ph.D., research scientist. Topic: HLA associations and disease (human leukocyte antigens).
- Lt. Gabriel Defang, Ph.D., research scientist. Topic: Influenza.
- Lt. Cmdr. Janine Danko, M.D., M.P.H., deputy department head. Topic: The Cry of the Poor: Infectious Diseases.

Population-Based Military Health Study Launches Next Survey Cycle

The Naval Health Research Center's (NHRC) Millennium Cohort Study began enrolling new participants into this DoD-wide study June 14. This year it expects to add 50,000 U.S. service members to reach a total goal of over 200,000 participants. Enrollment is projected to last six or more months.

The Millennium Cohort Study is the largest prospective military health study in the United States and captures data on service members from all of the military branches. Enrollment cycles, which occur every three years, have been timed to assess occupational exposures and health outcomes that may be related to deployment. This study is in its tenth year and is scheduled to continue until 2022.

"The Millennium Cohort Study is poised to provide critical information toward understanding the long-term health of future generations of military members, contributing to force health protection, a DoD priority," said Dr. Nancy F. Crum-Cianflone, the study's principal investigator. "In addition to the enrollment of service members in this cycle, we hope to enroll about 10,000 military spouses as part of the Millennium Cohort Family Study."

The Millennium Cohort Family Study is designed to get a better sense of how military families are coping with military life after nearly a decade of war. Spouses who enroll will be contacted every three years to complete a follow-up survey, even if their sponsor is no longer in the service. Findings from this study will go a long way toward helping to understand the emerging and changing needs of military families, as well as the cumulative effect of multiple deployments.

The Millennium Cohort Study team is currently working on a number of research efforts to prospectively investigate military, veteran and public health concerns possibly related to military service. Specifically, the study is designed to combine survey data with vaccination, personnel, deployment and military health system information to evaluate the impact of military service, including deployment, on various health measures.

In response to concerns about the health effects of deployments following the 1991 Gulf War, the Congress and the Institute of Medicine recommended that DoD conduct prospective epidemiological research to evaluate the impact of military exposures, including deployment, on long-term health outcomes. The Millennium Cohort Study, the largest prospective health study in the military with more than 150,000 participants at present, meets this critical need. Although the original designers of the Millennium Cohort Study could not foresee the post-2001 military conflicts, the project is perfectly positioned to address health outcomes related to these operations. More than forty percent of Millennium Cohort participants have deployed in support of the wars in Iraq and Afghanistan, and their input will enable investigators to prospectively evaluate detailed data from before, during and long after these deployments. Current areas of analysis include post-traumatic stress disorder, depression, alcohol misuse, respiratory illnesses and traumatic brain injury.

For more information on the Millennium Cohort Study, visit www.millenniumcohort.org.

Navy Researchers Inspire Students at the University of Maryland

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potential impact of new vaccines.

"I spoke about public health in a general context looking at groups of populations in less privileged areas of the world where folks don't have the resources to afford medicines and vaccines," said Danko. "I specifically brought up vaccines. If we can design a dengue vaccine or a malaria vaccine and ultimately deliver it to the part of the world where dengue and malaria really cause the most suffering, we can make a dramatic public health impact, save lives and reduce suffering."

Danko went on to add, "Since I was in uniform I viewed this as an opportunity to educate the students about what we do in Navy medicine and what career fields are available in scientific research fields. Not everyone who wears the uniform is on the front lines. Our mission in the medical and scientific fields is to bring technology forward to prevent diseases and protect our warfighters. I enjoyed the opportunity to educate about public health, and also saw this speaking opportunitiy as a recruiting mission to see that there is a future in joining the military and becoming a health scientist or researcher."

Leslie added that it was good to have different perspectives brought into her class so that the students are not just learning theories; they were actually seeing and hearing from people who do the work. This was a very rewarding experience for the students, she said.

Kellie Blue, an intern at NMRC this summer and anthropology major at the University of Maryland, said, "It was an enjoyable experience, learning about research and medicine. I want to pursue a career in this field."

"The students provided very positive feedback," said Leslie. "They didn't have any idea there were scientists in the Navy. They were impressed with the different backgrounds of the speakers. It is important to let the students know there are career opportunities and research careers, where they can actually do things and realistically make a difference."

NAMRU-2 Supports Laboratory Diagnostic Capabilities in Laos

NAMRU-2 Commanding Officer, Captain Gail L. Hathaway (left) and Chief of Cabinet of the Ministry of Public Health, Dr. Nao Boutta (right) sign Letter of Intent with senior level officials from the U.S. and Laos in the background.

The Lao People's Democratic Republic (PDR) Ministry of Health and the National Center for Laboratory and Epidemiology (NCLE) signed a Letter of Intent with U.S. Naval Medical Research Unit No. Two - Pacific (NAMRU-2) June 7. The Letter of Intent is aimed at strengthening support to laboratory diagnostic capabilities for identification of human and zoonotic pathogens, technical exchanges, and electronic disease outbreak detection and reporting capabilities.

The Letter of Intent, which was signed in Vientiane by the Chief of Cabinet of the Ministry of Public Health, Dr. Nao Boutta, and the NAMRU-2 Commanding Officer, Capt. Gail L. Hathaway, extends NAMRU-2's collaboration with the Lao PDR for the next five years.

Vice-Minister of Health, H.E. Dr. Bounkhouang Phichit, NCLE Director, Dr. Phengta Vongphachanh, and other senior level officials of the Ministry of Health attended the signing ceremony. In addition, the U.S. Pacific Command Surgeon, Rear Adm. Michael H. Mittelman; the U.S. Ambassador, Ms. Karen B. Stewart; and the U.S. Defense Attache, Lieut. Col. James McAden, attended for the United States.

The planned activities between NCLE and NAMRU-2 build on more than fifteen years of successful collaboration between these two organizations, dating back to 1994. NAMRU-2 has played an important role in strengthening laboratory capabilities and communication infrastructure to support infectious disease outbreak surveillance and response capabilities and reporting. In the future, NAMRU-2 and NCLE intend to continue cooperation to strengthen infectious disease surveillance and laboratory capacity in the Lao PDR in the interest of national and regional public health.

Under the Letter of Intent, NAMRU-2 will provide technical consultation, material support and technology transfers on mutually agreed terms as well as training assistance in the conduct of epidemiological research studies and electronic disease surveillance and reporting systems, including the Early Warning Outbreak Recognition System.

This cooperation is part of a growing comprehensive partnership between the United States and the Lao PDR to address public health requirements and capacity development in the health sector in Laos.

Naval Medical Research Center Hosts Annual ILIR Program Review

Nine researchers from the Naval Medical Research Center (NMRC) enterprise gave short presentations outlining their basic research projects funded by the Office of Naval Research (ONR) to a panel of reviewers from ONR. NMRC hosted the all-day annual event May 24.

The ONR panel's role each year is to assess the scientific and technical quality of the medical In-house Laboratory Independent Research (ILIR) Program and the relevance to the overall Navy Medicine mission.

"There are ten funded efforts that are intended to promote talented scientists and provide training grants for scientific outreach," said Capt. Elizabeth Montcalm-Smith, the ILIR Program Manager and host of the 2011 ILIR Review. "The efforts also support research in critical operational areas including vaccine development, laser eye protection, traumatic brain injury from blast exposures, trauma and resuscitative medicine, submarine medicine, regenerative medicine and Special Forces performance assessment."

From left: Dr. Tony Roffolo, Dr. David Fothergill (NSMRL), Dr. Lauren Kienker, Capt. Elizabeth Montcalm-Smith (NMRC), Commanding Officer Capt. Richard Haberberger (NMRC), Dr. Sheri Parkers, Dr. Reginald Williams (ONR), Lt. Leedjia Svec (NAMRU-San Antonio), Shirley Corpoz (ONR) and Dr. Joseph Chandler (NAMRL), all participated in the ILIR Review.

In addition to NMRC, the Naval Submarine Medical Research Laboratory (NSMRL), Naval Aerospace Medical Research Laboratory (NAMRL), and Naval Medical Research Unit-San Antonio (NAMRU-San Antonio) were represented.

"One component of the ILIR Program that Navy Medicine has not taken advantage of in the past is the Naval Research Enterprise Intern Program (NREIP), which provides an opportunity for undergraduate and graduate students to participate in research at a Department of Navy (DoN) laboratory during the summer," said Montcalm-Smith. While good science is performed in this program, outreach to students and exposure to the Navy lab are important also. Any lab that receives ILIR funding is able to sponsor a NREIP student; NREIP students are working at NMRC and NAMRU-San Antonio this summer.

Researchers and panelists take a tour of NMRC's diving facilities. Photos by Dave Miles.

Montcalm-Smith led the presenters and ONR reviewers on a tour of the NMRC diving facilities. Distinguished visitor Tony Roffolo of the Naval Undersea Warfare Center (NUWC) in Rhode Island and researchers such as Dr. David Fothergill (NSMRL) and Lt. Leedjia Svec (NAMRU-San Antonio) were able to tour and observe NMRC research facilities and get a first-hand look of the unique devices and capabilities of the facility.

Under the ILIR Program, many success stories highlight the outstanding science performed by the labs. For example, Dr. David Fothergill's research will determine safer repetitive decompression procedures for military divers, improve the operational capability of special operations forces oxygen and mixed gas diving operations and develop more efficient hyperbaric oxygen treatment/recompression therapy profiles. Also, the recent advancements in laser eye protection led by NAMRU-San Antonio will allow a better understanding of the mechanisms by which laser eye protection affects vision and the impact on safety and performance of all sailors in the Navy.

Dale White Proud of Fifty Plus Years of Civil Service with Navy

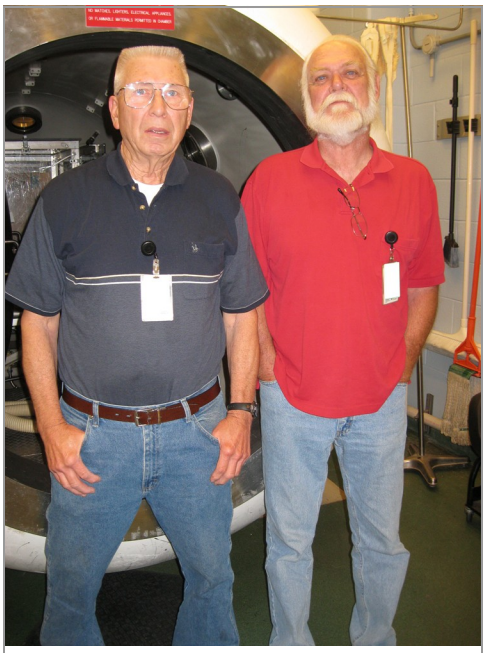
Dale White began his almost 52 years of civil service working with the Navy as a machinist apprentice and is now an accomplished engineering technician. In 1959, he began a four-year apprenticeship at the Naval Ordinance Laboratory. White reminisced that in that year, he made $1.88 an hour and Dwight D. Eisenhower was the 34th president of the United States. In 1968, he moved on to Public Works, at the time located by the Naval Hospital in Bethesda. After a productive 20 years there, he transferred to the Naval Medical Research Institute (NMRI), now known as the Naval Medical Research Center (NMRC), December 27, 1989.

"Dale White builds everything and anything from scratch and supports many of the scientists here at NMRC. He increases and enhances the already unique capabilities in the Undersea Medicine Department. His passion is illustrated through his work and everyone who has enjoyed the good fortune of working with him through many years speaks very highly of him with a deep appreciation of his talents," said Rich Ayres, long time co-worker and engineering technician.

What White does makes him an essential part of the research that takes place here. Investigators, laboratory technicians, subject matter experts, even support and facilities personnel all come to him. Their needs are often so novel they are unable to provide an explanation beyond a crude drawing.

Ayres, who has been working side by side with White for more than 20 years, says he is an uncomplicated guy with vision. "You can just tell him what the problem is and he comes back with the solution. He is methodical and precise," Ayres observed.

White acknowledges he likes to make things as simple and uncomplicated as possible when building something. "How are the scientists going to use the apparatus without having a problem? I like to start off with a basic idea and from there other ideas will flow. It's important for me to spend a lot of time thinking and talking to get all the bugs out," said White.



Dale White (left) and Richard Ayres.

White has built equipment ranging from small hyperbaric chambers to immersion chambers to an in-line breathing gas humidifier to a blast suit, all according to rigid specifications to meet safety and certification standards mandated for environmental laboratory research.

With each new protocol, modifications are almost guaranteed and require his ingenuity to generate, fabricate and refine the final product to ensure that the protocol's hypotheses can be soundly examined. White's participation in the protocol development and execution provides the support investigators need to keep them at the forefront of this unique medical research.

"We have to be able to constantly change what we can do with our equipment or capabilities and Dale is a significant part of that," said Ayres.

Given White's long and productive history as a Navy employee, it is evident that he enjoys what he does and takes pride in his work. His impact on Navy medical research is demonstrated through his work, the accolades of his coworkers, and the passion he shares when describing his work.

Dale White explains the process of creating a rotating drum that will fit inside a hyperbaric chamber.

Admirals Join Hospital Corpsmen to Celebrate 113th Birthday

During their visit at NMRC, Rear Adm. Bruce A. Doll and Rear Adm. Eleanor V. Valentin honored all Corpsmen, past and present, celebrating the 113th Hospital Corpsmen Birthday June 17. Their visit was in regards to the turnover of responsibilities between Rear Adm. Doll and Rear Adm. Valentin.

NMRC Officers Support Continuing Promise 2011 on USNS Comfort

(Continued from page 5)
rheal and respiratory diseases are quite common and require ongoing public health attention.

"The enhanced surveillance efforts that the PMD put in place is impressive and has not only helped to guide targeted population health preventive measures, but also has served to educate a cadre of providers on the cause and optimal treatment of travelers' diarrhea," says Cmdr. Bill Scouten, director of medical services, USNS Comfort.

Photo, from left: Factory worker, Air Force Capt. Tracy Brannock, Mr. Max Gyllenskog (Latter Day Saints Charities), and Cmdr. Mark Riddle visit a local artisan cheese factory in Rivas, Nicaragua.

Secretary of the Navy Awards Meritorious Unit Commendation to NAMRL

(Continued from page 2)
prepared for the BRAC transition, managing the complex logistics associated with physically moving the laboratory over 750 miles.

NAMRL personnel and leadership successfully oversaw the design and construction of their new facilities and assumed the role of technical lead for the design and building of two novel research devices, one of which was a one-of-a-kind Disorientation Research Device that will be a cornerstone of Navy Medicine's aeromedical research program.

Of the smallest laboratories in the Naval Medical Research and Development Enterprise, NAMRL was recognized by several federal, national and international organizations for producing outstanding research, with six awards bestowed, including two Federal Laboratory Consortium awards for technology transfer, the only laboratory in the Enterprise ever to receive this honor.

NAMRL staff, October 2010.

NAMRL leadership instilled a culture of service, resulting in a heightened commitment to its mission to directly impact warfighter readiness and Fleet survivability with relevant operational products. The award is a testament to the distinctive accomplishments, unrelenting perseverance and unfailing devotion to duty displayed by the officers and staff of NAMRL and represents the culture of excellence that will continue at Naval Medical Research Unit-Dayton.

Greetings from the NMRC Ombudsman!

Emergency Preparedness: In this time of natural disasters and political unrest around the world, all military personnel should ensure their personal information is updated on the Navy Family Accountability and Assistance System (NFAAS) (https://navyfamily.navy.mil/). During times of declared disasters and evacuations, Sailors can muster through NFAAS and provide a clear update of their current situation. Based on this information, Fleet and Family Support Center representatives can decide best how to provide assistance. NFAAS also provides extensive references for planning and recovery that can be used anytime.

Social Media and Your Privacy: The new saying goes, "Loose tweets sink fleets." With more and more of us becoming involved in different types of social media, it is critical that we be educated on how to maintain strictest privacy for the safety of our Sailors, our families and ourselves. Keep these facts in mind when posting information online:

- Limit the amount and type of information you provide (names, addresses, hometown, schools, etc.).
- Take time to understand the available security settings and use them appropriately.
- Simply do not discuss sensitive information (ship movements, deployment schedules, personnel rosters, etc.).

Your Children and Bullying: Bullying has become a huge problem among today's youth. Learn about cyberbullying, recognize the warning signs of bullying, learn how to deal with it and take a stand against it. Check out StopBullying.com (http://www.stopbullying.gov/) to get more information about topics including state policies and laws, violence prevention program di-rectories, online resources, and research.

If you need more information on these or any other resources, please contact me at angela.prouty@med.navy.mil or 217-722-4981.

Angela Prouty
Ombudsman, NMRC

NMRC Introduces a New Set of Interns to a Career in STEM

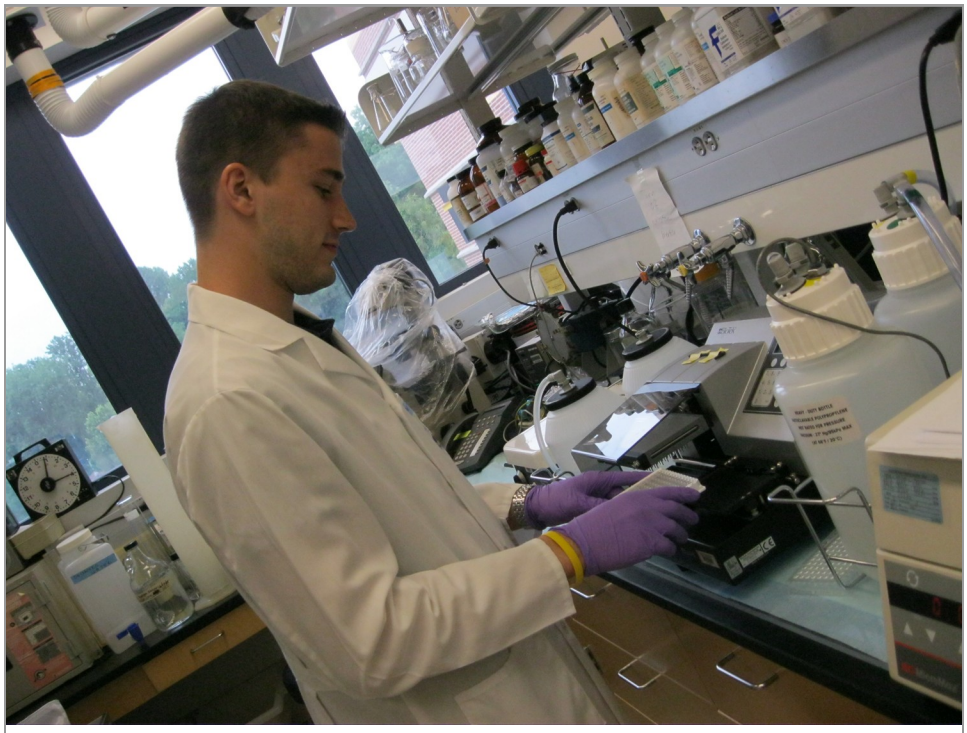
(Continued from page 1)
populations do not remain untapped resources.

Here at NMRC, we recently welcomed another set of bright students under NREIP and SEAP. This year, Guerrero will provide organizational support to ten Navy student participants and their mentors. He is optimistic that directors will further encourage their researchers to be a part of this STEM evolution, ultimately joining a concerned group of Americans who have a long view for our country.

"We can't expand unless we can provide justification for growth to our funding sources, and that justification comes in the form of mentors coming forward," Guerrero said.

At NMRC, students are paired with scientist mentors like Capt. Stephen Savarino, Dr. Allen Richards, Cmdr. Robert Gormley and Dr. Wei Mei Ching, to name a few. As mentors, these individuals have become an integral part of keeping STEM education and awareness a priority in the Navy. By giving time, teaching skills, and sharing experiences with promising high school and college students, they are helping shape a brighter future for an upcoming generation of scientists.

Just think what a benefit to students it is to have a scientist showing them the ropes! Our scientists are ensuring that NMRC continues to make a significant contribution to the future of Naval service and our nation.



Georgetown University student David Barton's results should help in formulating a panel of biomarkers to aid in the diagnosis and prognosis of TBI in injured soldiers.

NMRC students will have the opportunity to work closely with their mentors and undertake a hands-on research project. At the end of the summer, each student will be required to create a poster of their research and present it to their peers and mentors.

"The STEM objective is to increase, inspire and support the talent pool from which the future's great Sailors, Naval scientists and engineers will come," according to Chief of Naval Research Rear Adm. Nevin Carr.

At the STEM2Stern Naval STEM Forum, held June 15-16, Chief of Naval Operations Adm. Gary Roughead stressed the importance of generating STEM interest in as big a pool of potential applicants as possible.

"The trends we see promise to impact both our pool of professional scientist and engineers developing the future force, as well as Sailors of the future who we expect to operate increasingly complex systems in an information age Navy," said Roughead.

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